**Pendulums Lab**

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| Criteria D – Scientific Inquiry | State a focused research question to be tested by an investigation |
| Judge the validity of a hypothesis based on the outcome of the investigation |
| Formulate a hypothesis and explain it using scientific language |
| Suggest improvements to the method or further inquiry when relevant |
| Collect and record data |
| Criteria E – Processing Data | Draw conclusions consistent with the data and supported by scientific reasoning |
| Analyze and interpret data |
| Organize and present data using numerical and visual forms |
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To investigate how the length of a pendulum affects its rate of swinging.

Equipment:

70 cm of string

Paperclip

Ball of plasticine about 3 cm in diameter.

Masking Tape

Measuring device

Stop watch app

Procedure:

1. Get all of the necessary equipment
2. Complete the lab report up to the results section
3. Push the paperclip into your plasticine ball
4. Tie the end of your string to the paperclip
5. Hang the pendulum from the desk using the tape to hold it in place
6. Measure the swing rate using three different pendulum lengths. Measure how long it takes for the pendulum to swing ten times then divide by ten to get the swing rate for one swing.
7. Document these measurements in a table
8. Clean up and put everything away
9. Complete the lab report results, conclusion and evaluation

Pendulums Lab Report Assessment Criteria

**Criterion D – Scientific Inquiry**

**Achievement Level**

Descriptor

**0**

The student does not reach a standard described by any of the descriptors below.

**1-2**

You are able to make some attempt to suggest a research question for your investigation. You are able to make an attempt with writing a plan for your investigation. You are able to make some comments on how well your investigation worked.

**3-4**

You are able to suggest a reasonable research question for their investigation. You are able to write a mostly workable plan for your investigation, showing some understanding of fair testing. You are able to make mostly reasonable comments on how well your investigation worked and some suggestions on how you could improve your investigation.

**5-6**

You are able to suggest a suitable research question for your investigation and make a prediction for what results you might obtain. You are able to write a workable plan for an investigation, showing good understanding of fair testing. You are able to make relevant comments on how well your investigation worked and how you could improve their investigation.

**Criterion E – Processing Data**

**Achievement Level**

Descriptor

**0**

The student does not reach a standard described by any of the descriptors below.

**1-2**

You are able to collect some data from the pendulum experiment. You are able to present the data in a simple results table that has been constructed for them, and make some attempt to draw a simple type of graph. You attempt to comment on the relationships in the data but in a very limited way. You attempt to draw a conclusion, but it likely does not show a proper interpretation of the data.

**3-4**

You are able to collect a considerable amount of data using appropriate units. You are able to make a reasonable effort to present your data in a suitable table, and draw suitable graphs or charts. You are able to describe almost correctly the relationship shown in the data from the experiment. You are able to draw a conclusion generally consistent with the interpretation of the data.

**5-6**

You are able to collect a considerable amount of data using appropriate units. You are able to present your data in a suitable table, do any calculations that are necessary, and draw suitable graphs or charts. You are able to describe correctly the relationship show in the data from the experiment. You are able to draw a conclusion consistent with the interpretation of the data.